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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,621	01/18/2002	James Bernard Kruger	SJO920010141US1	5781
7590	07/14/2004		EXAMINER	
Ron Feece			KIM, PAUL D	
INTERNATIONAL BUSINESS MACHINES CORPORATION				
Dept. L2PA			ART UNIT	PAPER NUMBER
5600 Cottle Road			3729	
San Jose, CA 95193				DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/054,621	KRUGER ET AL.
Examiner	Art Unit	
Paul D Kim	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 17 June 2004.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-30 is/are pending in the application.  
4a) Of the above claim(s) 5-8, 10-18 and 27-30 is/are withdrawn from consideration.  
5)  Claim(s) 19-26 is/are allowed.  
6)  Claim(s) 1-4 and 9 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_

## DETAILED ACTION

This office action is a response to the amendment filed on 6/17/04.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtomo et al. (US PAT. 6,101,068) in view of Lyons et al. (US PAT. 6,214,737).

Ohtomo et al. teach a process of making a magnetic head assembly including forming a magnetic pole tip (13) as shown in Figs. 1A and 1B (see also col. 9, lines 33-49). Ohtomo et al. also teach processes of forming nonmagnetic first and second read gap layers (5) and a read sensor (9) is formed in between the first and second read gap layers; and forming the first and second read gap layers between the first shield layer (2) and the first pole piece layer (3) as shown in Figs. 1A and 1B (as per **claim 4**).

However, Ohtomo et al. do not teach how the pole tip is formed. Lyons et al. teach a process of forming a conductive structure comprising steps of: forming a shaping layer (12) on an underlying layer (10) wherein the underlying layer has a flat surface and wherein the shaping layer has a side surface (16) and a top surface as shown in Fig. 2; depositing a layer (18) on the underlying layer and on the side and top surfaces of the shaping layer as shown in Fig. 3; and removing first and second portions of the layer from the underlying layer and the top surface of the shaping layer

respectively leaving a remaining portion (18a) of the layer on the side surface of the shaping layer as shown in Fig. 4 (see also col. 6, line 37 to col. 8, line 49). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to facilitate a process of forming a magnetic pole tip of Ohtomo et al. by a process of forming a conductive structure as taught by Lyons et al. in order to produce a desired thickness of the pole tip of the magnetic head in a simple and efficient manner.

Also, even though Lyons et al. describe a process of depositing the material of silicone oxynitride, it would have been an obvious to a person of ordinary skill in the art to apply the magnetic material as recited in the claimed invention because Lyons et al. show only process of forming a side wall for a conductive structure as recited in the claimed invention. Therefore, it would have been an obvious matter of design choice to modify the material of silicone oxynitride of Lyons et al. with a magnetic material to obtain the invention as specified in claim 1.

As per **claim 2** Lyons et al. teach a process of depositing the layer (18) in a suitable manner (col. 6, lines 66-67) including a CVD technique. Even though Lyons et al. do not teach a ion beam sputtering process for depositing, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to deposit the material including the ion beam sputtering process as recited in the claimed invention because Applicant has not disclosed that the depositing process as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to form equally with Lyons et al.

because the ion beam sputtering process as recited in the claimed invention would form the material equally with the depositing process in Lyons et al. Therefore, it would have been an obvious matter of design choice to modify the depositing process of Lyons et al. to obtain the invention as specified in claim 2.

As per **claim 3** Lyons et al. also teach a process of removing the shaping layer as shown in Fig. 5.

As per **claim 9** Lyons et al. also teach a process of forming a photoresist layer (12) as shown in Fig. 2 and a process of forming the photoresist layer with the side surface (16) wherein the side surface coincides with the edge of the pole tip (18a) as shown in Fig. 4.

#### ***Allowable Subject Matter***

3. Claims 19-26 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such as processes of forming a second photoresist layer with an edge which coincides with an edge site of said pole tip and reactive ion etching the masking layer and the first photoresist layer to form the masking layer and the first photoresist layer with said side surface for forming an edge of said pole tip. It is not obvious taken alone or in combination of other references fairly to suggest the claimed invention.

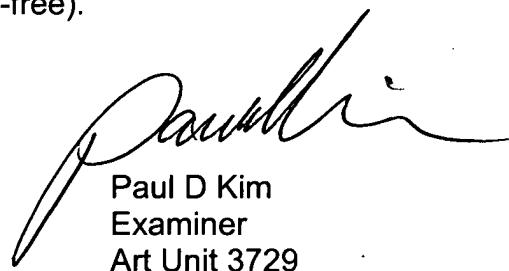
***Response to Arguments***

5. Applicant's arguments with respect to claims 1-4, 9 and 19-26 have been considered but are moot in view of the new ground of rejection.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim  
Examiner  
Art Unit 3729